



UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,283	10/18/2001	Thuji Simon Lin	47450/JFO/B600	2222
23363	7590	08/10/2005		EXAMINER
CHRISTIE, PARKER & HALE, LLP PO BOX 7068 PASADENA, CA 91109-7068				WARE, CICELY Q
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/045,283	LIN ET AL.	
	Examiner	Art Unit	
	Cicely Ware	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 October 2001.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-55 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-55 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 18 October 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. _____.
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____. 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because

a.) In Fig. 1, examiner suggests applicant label elements as referenced in specifications.

It is office policy to request from applicants that submitted figures contain both text and numerical labels to allow individuals viewing each figure to be able to determine the designation of each element in the figure without having to go into the specifications.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because:

- a. Pg. 28, lines 1 and 30, examiner suggests applicant delete these lines for clarification purpose.

Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:
 - a. Pg. 4, line 15, applicant uses the phrase "embedded codes needed to achieved the". Examiner suggests using "embedded codes needed to achieve the" for clarification purposes.

Appropriate correction is required.

Claim Objections

5. Claim 51 is objected to because of the following informalities:
 - a. Claim 51, line 2, applicant uses the phrase "predetermined number integer number". Examiner suggests using "predetermined integer number" for clarification purposes.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. Claim 55 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Claim 55 recites "substantially minimum". "Substantially minimum" is

vague and indefinite because it does reference a definite limitation.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, 3, 11-18, 47, 49-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams (5,598,435).

(1) With regard to claim 1, Williams discloses in (Fig. 1) a communication device for communicating data through a data channel, the communication device comprising:
a. a data transformer operably coupled with the data channel, the data transformer manipulating the data between data bits, a data bit vector, and a transmission symbol, the data bit vector having a selectable predetermined integer number of data bits, the transmission symbol containing a selectable integer number of the data bit vectors (col. 1, lines 12-40, 57-67, col. 2, lines 40-46); and b. a controller operably coupled with the data transformer, the data transformer being responsive thereto, the controller adaptively selecting the selectable predetermined integer number of data bits, and the selectable integer number of data bit vectors to communicate the data through the data channel at a predetermined data bit rate in response to a data channel condition (col. 2, lines 62-67, col. 3, lines 1-67, col. 4, lines 24-44).

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Williams further discloses wherein the transmission symbol is comprised of one data bit vector having one of a first predetermined integer number of data bits and a second predetermined integer number of data bits represented therein (col. 3, lines 1-67).

(3) With regard to claim 3, claim 3 inherits all the limitations of claim 1. Williams further discloses wherein the transmission symbol is comprised of a selectable integer plurality of data bit vectors, each of the selectable integer plurality of data bit vectors having one of a first predetermined integer number of data bits and a second predetermined integer number of data bits represented therein (col. 3, lines 1-67).

(4) With regard to claim 11, claim 11 inherits all the limitations of claim 1. Williams further discloses in (Fig. 1) wherein the data channel condition (202) comprises at least one of received power, signal-to-noise ratio (202), and an input from a master control (102) (col. 3, lines 11-18, col. 4, lines 24-35, 50-64).

(5) With regard to claim 12, claim 12 inherits all the limitations of claim 1. Williams further discloses wherein the controller is responsive to the data channel condition in a preselected domain (col. 1, lines 12-27, col. 2, lines 62-67).

(6) With regard to claim 13, claim 13 inherits all the limitations of claim 12. See rejection of claim 11.

(7) With regard to claim 14, claim 14 inherits all the limitations of claim 12. Williams further discloses wherein the preselected domain comprises one of a time domain and a frequency domain (col. 1, lines 12-27, col. 2, lines 62-67).

(8) With regard to claim 15, claim 15 inherits all the limitations of claim 13. See rejection of claim 14.

(9) With regard to claim 16, claim 16 inherits all the limitations of claim 13. Williams further discloses wherein the signal-to-noise ratio comprises one of transmitted power, channel attenuation, noise and interference (col. 3, lines 6-16).

(10) With regard to claim 17, claim 17 inherits all the limitations of claim 1. Williams further discloses wherein the predetermined data bit rate is at least one of a non-power of two and a non-integer (col. 3, lines 1-10).

(11) With regard to claim 18, claim 18 inherits all the limitations of claim 17. Williams further discloses wherein the transmission symbol is representable by a plurality of symbol constellations (col. 3, lines 11-34).

(12) With regard to claim 47, Williams further discloses in (Fig. 1) a communication device, comprising: a. a variable bit rate data to symbol transformer, the transformer adaptively selecting a data vector sized to have a selectable predetermined integer number of data bits therein, and producing a predetermined data bit rate of at least one of a non-power of two and a non-integer; and b. a controller for selecting the predetermined data bit rate in response to a data channel condition (col. 3, lines 1-67, col. 4, lines 24-44).

(11) With regard to claim 49, Williams further discloses A communication system communicating data bits through a data channel, comprising: a data transformer coupled with the data channel, the data transformer transforming the data bits into a transmission symbol, the transmission symbol being composed of a selectable integer

number of data bit vectors, each of the data bit vectors being composed of a selectable predetermined integer number of the data bits (col. 3, lines 1-67), the data transformer mapping a selectable number of transmission symbols into a data symbol selected from a signal constellation, the signal-constellation being one of an integer signal constellation and a power-of-two signal constellation, the selectable predetermined integer number of data bits being selected to provide a preselected average data bit transmission rate (col. 1, lines 58-67, col. 2, lines 40-46, col. 4, lines 24-44).

(12) With regard to claim 50, claim 50 inherits all the limitations of claim 49. Williams further discloses in (Fig. 1) a controller (202, 201) coupled between the data channel and the data transformer, the controller sensing at least one data channel condition (202) and compelling the data transformer to select one of the selectable integer number of data bit vectors and the selectable predetermined integer number of the data bits, responsive thereto (col. 6, lines 53-67-col. 7, lines 1-6).

(13) With regard to claim 51, claim 51 inherits all the limitations of claim 49. Williams further discloses wherein the selectable predetermined integer number of data bits is adaptively selected (col. 3, lines 17-67, col. 4, lines 19-35).

(14) With regard to claim 52, claim 52 inherits all the limitations of claim 51. Williams further discloses wherein the selectable predetermined integer number of data bits is one of k bits and k+1 bits, where k is an integer number of data bits (col. 4, lines 19-23).

(15) With regard to claim 53, claim 53 inherits all the limitations of claim 52.

Williams further discloses wherein the preselected average data bit transmission rate is a no-integer data bit transmission rate (col. 4, lines 36-44).

9. Claim 54 is rejected under 35 U.S.C. 102(e) as being anticipated by Langewellpott (US Patent 5,063,573).

With regard to claim 54, Langwellpott discloses a communication system comprising: a constellation-multiplexing transmitter; and a maximum-likelihood sequence estimation receiver (col. 2, lines 48-68 – col. 3, lines 1-15).

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-54 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-53 of U.S. Patent No.

6,553,063. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

- a. Claims 1-46 of the patent fully encompass all the limitations of claims 1-46 of the instant application.
- b. Claim 47 of the patent contains all the limitations of claim 47 of the instant application.
- c. Claim 48 of the patent contains all the limitations of claim 48 of the instant application.
- d. Claim 49 of the patent contains all the limitations of claim 49 of the instant application.
- e. Claim 50-53 of the patent contains all the limitations of claim 50-53 of the instant application.
- f. Claim 19 of the patent contains all the limitations of claim 54.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Art Unit: 2634

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
August 8, 2005



STEPHEN CHIN
SUPERVISORY PATENT EXAMINEE
TECHNOLOGY CENTER 2800